

FIG. 1A

	BIO-DEGRADABLE	COST	OTHER COMMENTS
CHLORINE DIOXIDE	HIGHLY BIO-DEGRADABLE	MODERATE	DOES NOT FORM CHLORINATED BY-PRODUCTS
SODIUM HYPOCHLORITE/ CALCIUM HYPOCHLORITE	MODERATE FOR BLEACH ITSELF. LOW FOR CHLORINATED BY-PRODUCTS	LOW	STABILITY PROBLEMS, FORMS CHLORINATED BY-PRODUCTS
GLUTERALDEHYDE	MODERATELY HIGH AT USE CONCENTRATIONS	MODERATE TO HIGH	ODORS
HYDROGEN PEROXIDE	HIGHLY BIO-DEGRADABLE	RELATIVELY LOW	STABILITY, STORAGE, AND HANDLING
DRY CHLORINE COMPOUNDS	LOW TO MODERATE	RELATIVELY LOW	DUSTING, HANDLING ISSUES
OZONE	HIGHLY BIO-DEGRADABLE	VERY HIGH IN ALL REGARDS	EQUIPMENT EXPENSIVE MAINTENANCE INTENSIVE
QUATERNARY AMMONIA COMPOUND	POOR FOR MOST FORMULATIONS	MODERATELY HIGH	FOAMS INACTIVATED BY SOLIDS, SYNERGISTIC WITH C102
PERACETIC ACID	HIGHLY BIO-DEGRADABLE	MODERATELY HIGH	SAFETY AND HANDLING

FIG. 1B

	PH	BIOFILM	TOXICITY	CORROSIVENESS
CHLORINE DIOXIDE	NEUTRAL	VERY GOOD	NEGIGLABLE AT USE CONCENTRATIONS	NEGIGLABLE AT USE CONCENTRATIONS
SODIUM HYPOCHLORITE/ CALCIUM HYPOCHLORITE	ALKALINE	INEFFECTIVE	MAY PRODUCE CHLORINATED BY-PRODUCTS	CORROSIVE TO Fe AND Al
GLUTERALDEHYDE	NEGLIGIBLE	INEFFECTIVE	MAY CAUSE SEVERE SKIN IRRITATION	MAY CAUSE SEVERE SKIN IRRITATION IN SOME INDIVIDUALS
HYDROGEN PEROXIDE	NEUTRAL	INEFFECTIVE	MAY BE EXTREMELY IRRITATING TO SKIN AND TISSUES AT USE CONCENTRATIONS	HIGH ON Fe, Al, and Zn
DRY CHLORINE COMPOUNDS	MODERATELY TO HIGH	INEFFECTIVE	MAY PRODUCE CHLORINATED BY-PRODUCTS	CORROSIVE TO Fe and Al
OZONE	NEUTRAL	INEFFECTIVE	PROBABLY NEGIGLABLE AT USE CONCENTRATIONS	CORROSIVE TO Fe and Al AT HIGHER CONCENTRATIONS
QUATERNARY AMMONIA COMPOUND	ACID TO NEUTRAL	INEFFECTIVE	SKIN AND LUNG IRRITATION	CAN BE CORROSIVE TO Fe, Cu, AND BRASS
PERACETIC ACID	NEUTRAL TO ALKALINE	INEFFECTIVE	SEVERE SKIN IRRITATION, CAN CAUSE BLINDNESS	HIGH ON Fe, Al, and Zn

FIG. 1C

	EFFICACY	MICROBIAL RANGE	CONTACT TIME	CONCENTRATION
CHLORINE DIOXIDE	HIGH	BROAD SPECTRUM EFFECTIVE AGAINST ALL ORGANISMS	SECONDS TO MINUTES	0.1 PPM TO 5 PPM
SODIUM HYPOCHLORITE/ CALCIUM HYPOCHLORITE	MODERATE	INEFFECTIVE AGAINST MANY ORGANISMS	MINUTES TO HOURS	5PPM TO 100 PPM
GLUTERALDEHYDE	MODERATE TO HIGH	SPOROCIDAL	30 MINUTES TO SEVERAL HOURS	50 PPM TO 100 PPM
HYDROGEN PEROXIDE	LOW	REQUIRES HIGH CONCENTRATIONS, TO ACHIEVE KILL	15 MINUTES TO SEVERAL HOURS	500 PPM TO 700 PPM
DRY CHLORINE COMPOUNDS	MODERATE	INEFFECTIVE AGAINST MANY ORGANISMS	30 MINUTES TO SEVERAL HOURS	5PPM TO 100 PPM
OZONE	HIGH	BROAD SPECTRUM EFFECTIVE AGAINST ALL ORGANISMS	SECONDS TO MINUTES	0.1 PPM TO 10 PPM
QUATERNARY AMMONIA COMPOUND	MODERATE TO HIGH	INEFFECTIVE AGAINST MANY ORGANISMS	MINUTES TO SEVERAL HOURS	30 PPM TO 100 PPM
PERACETIC ACID	MODERATE	INEFFECTIVE AGAINST MANY ORGANISMS	30 MINUTES TO SEVERAL HOURS	5 PPM TO 100 PPM

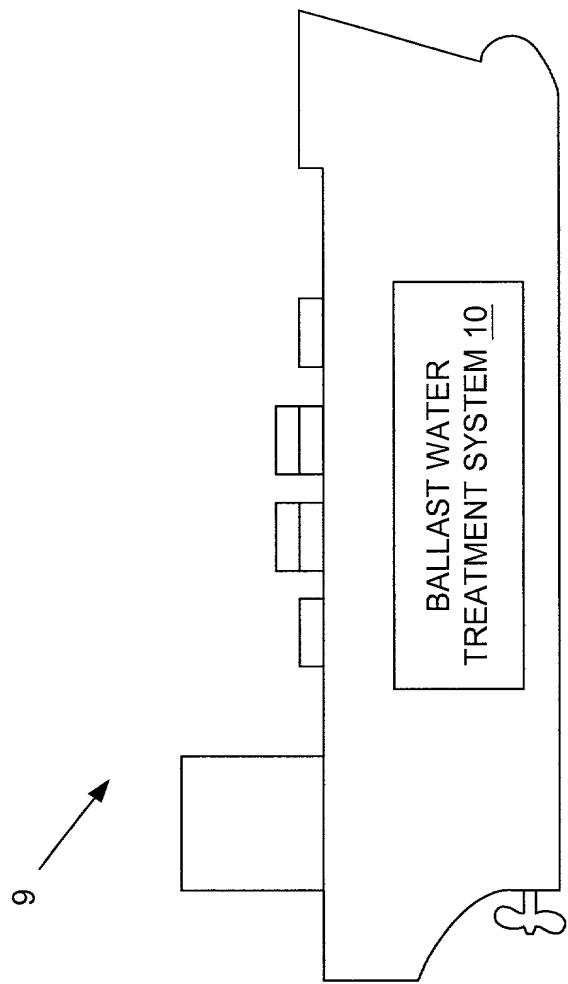


FIG. 2A

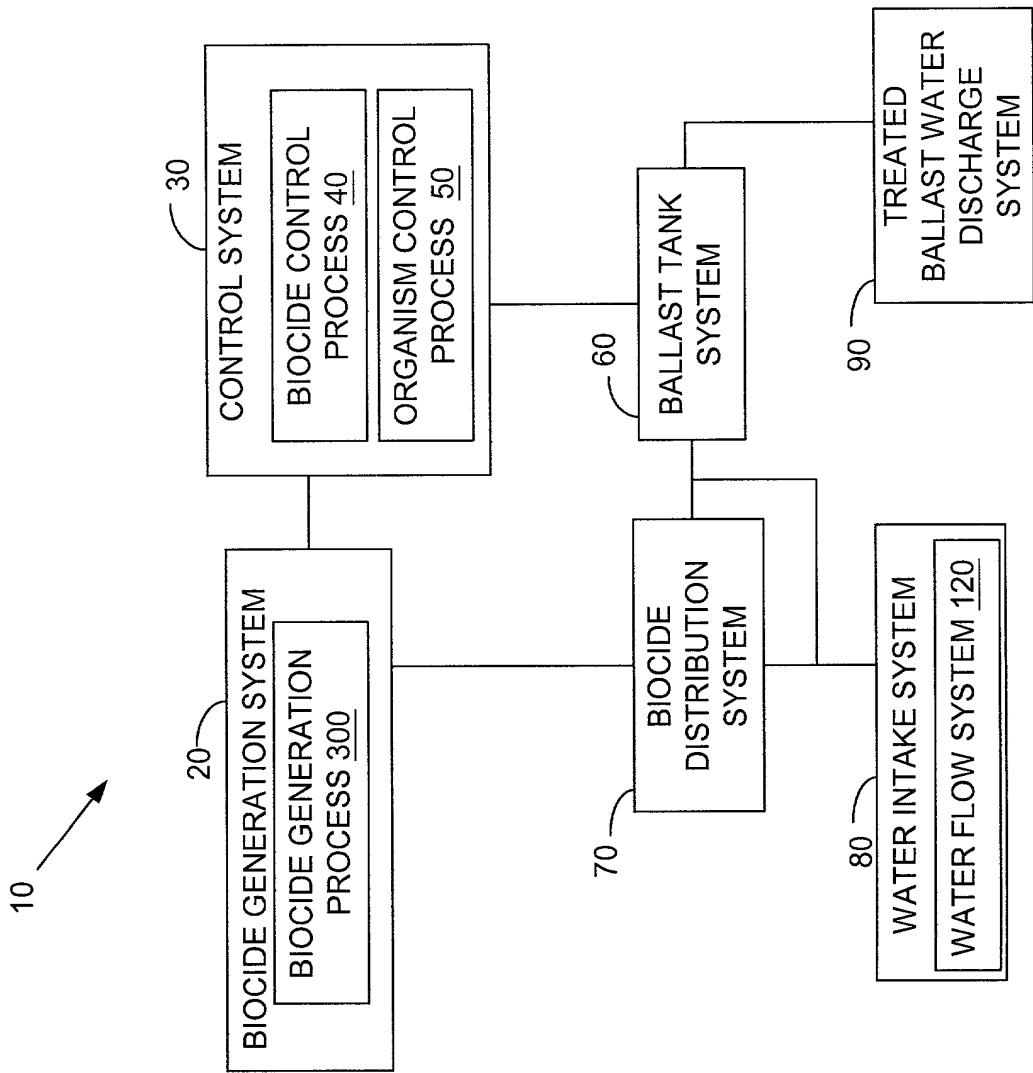


FIG. 2B

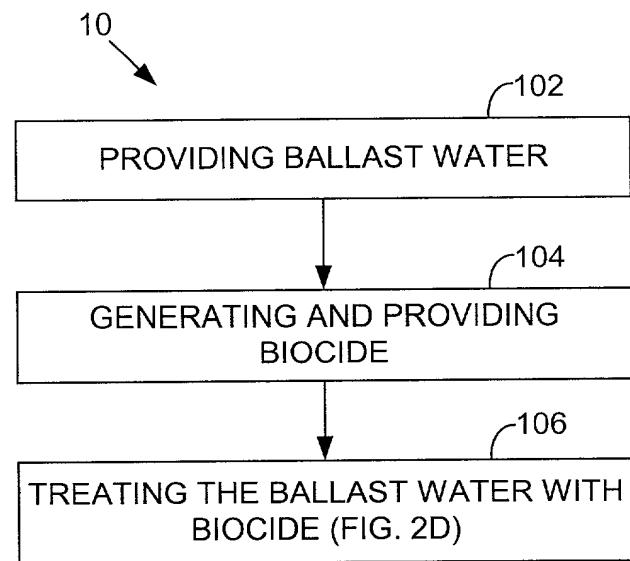


FIG. 2C

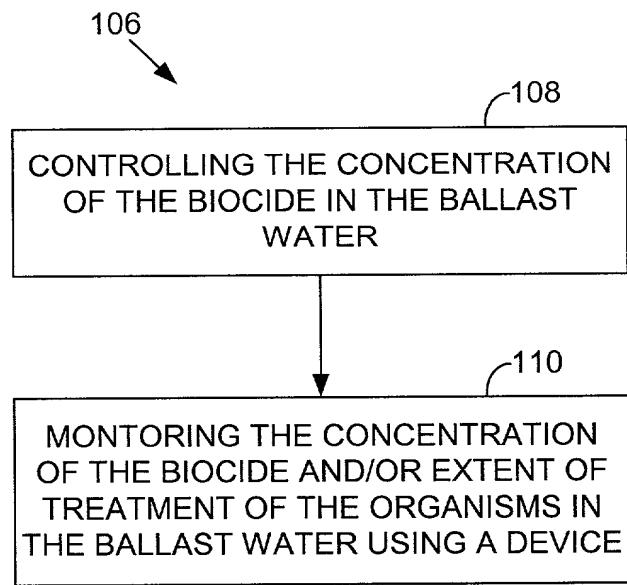


FIG. 2D

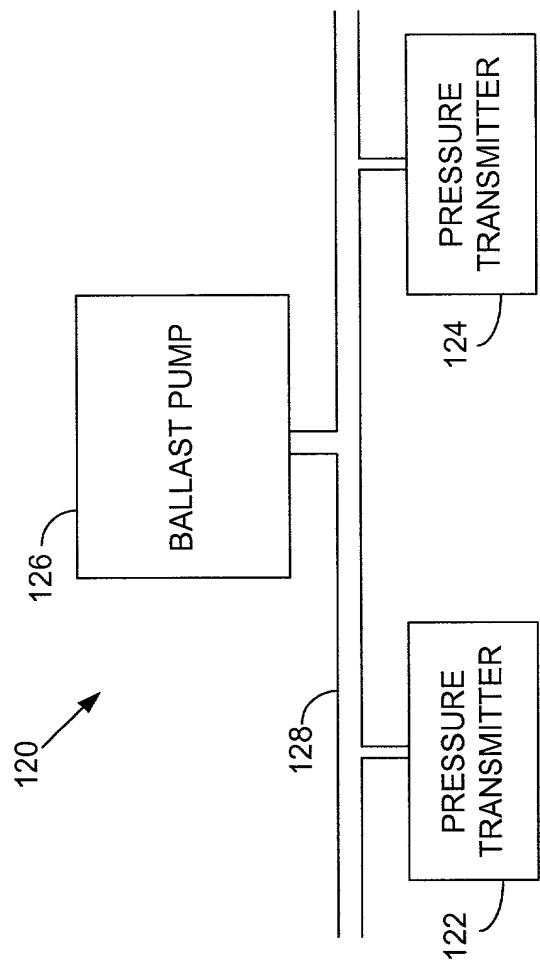


FIG. 3

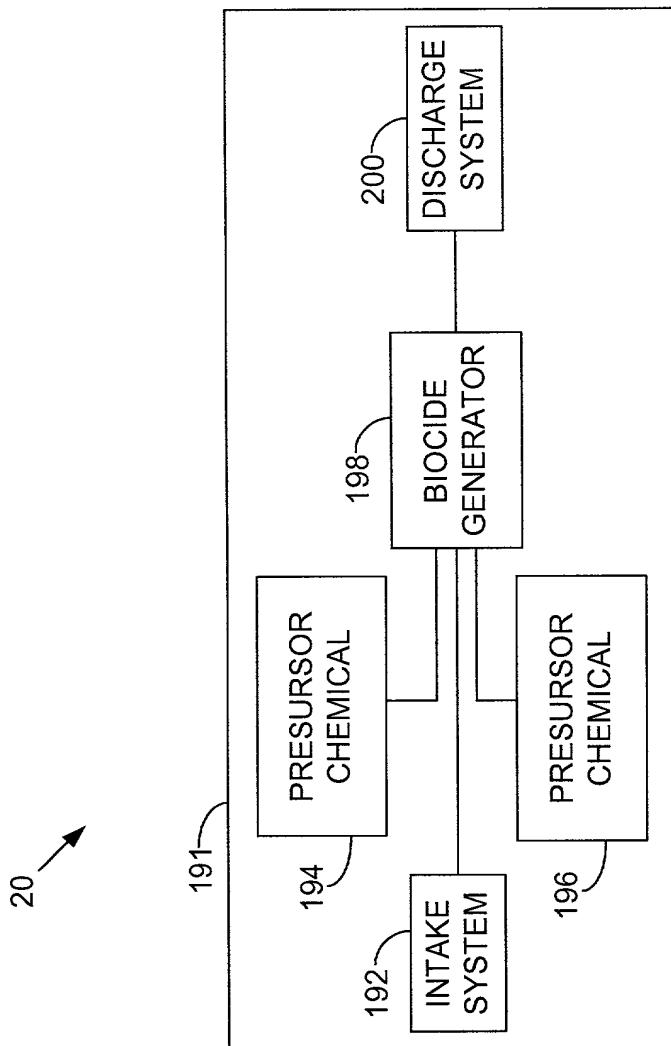


FIG. 4

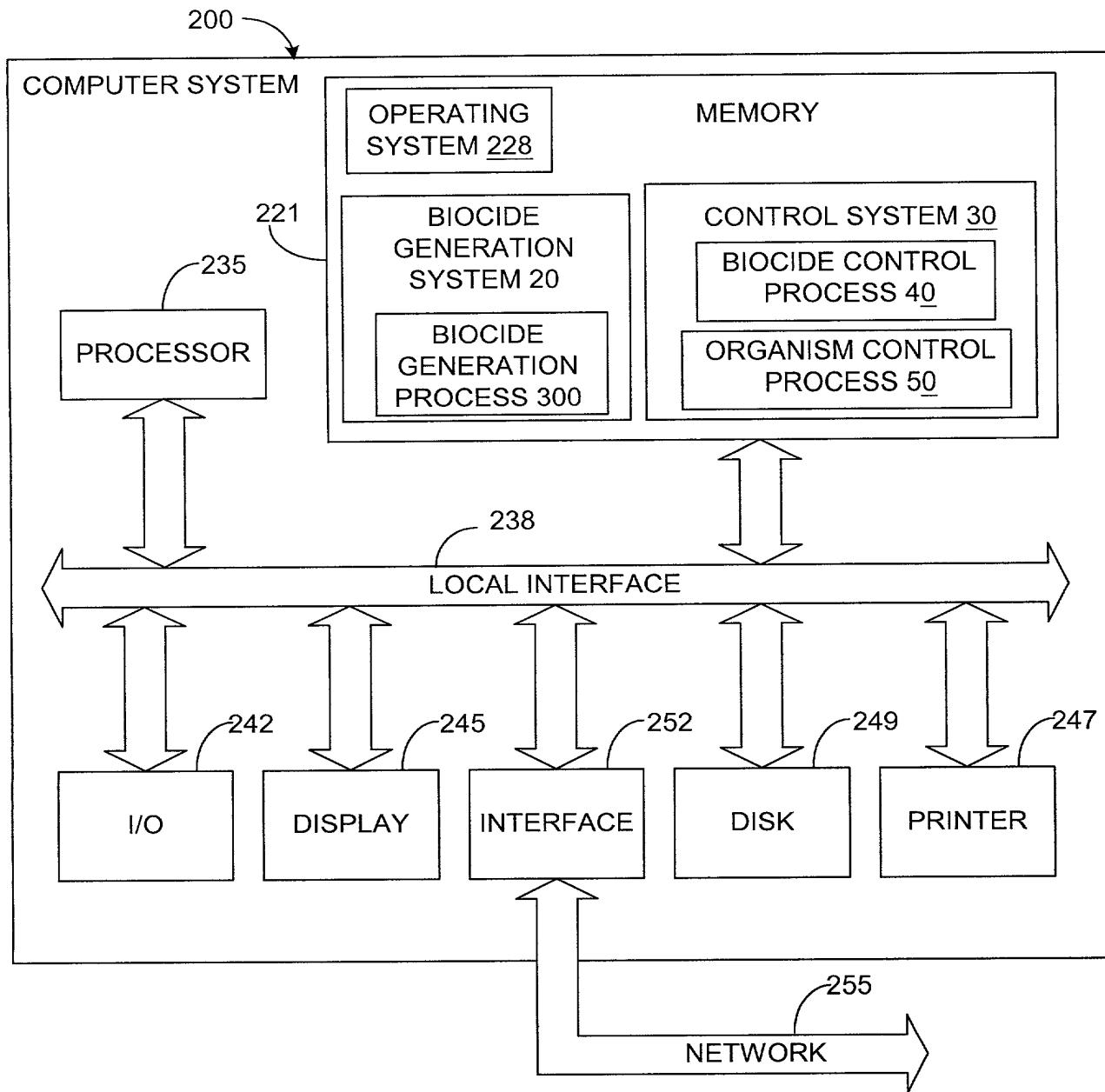
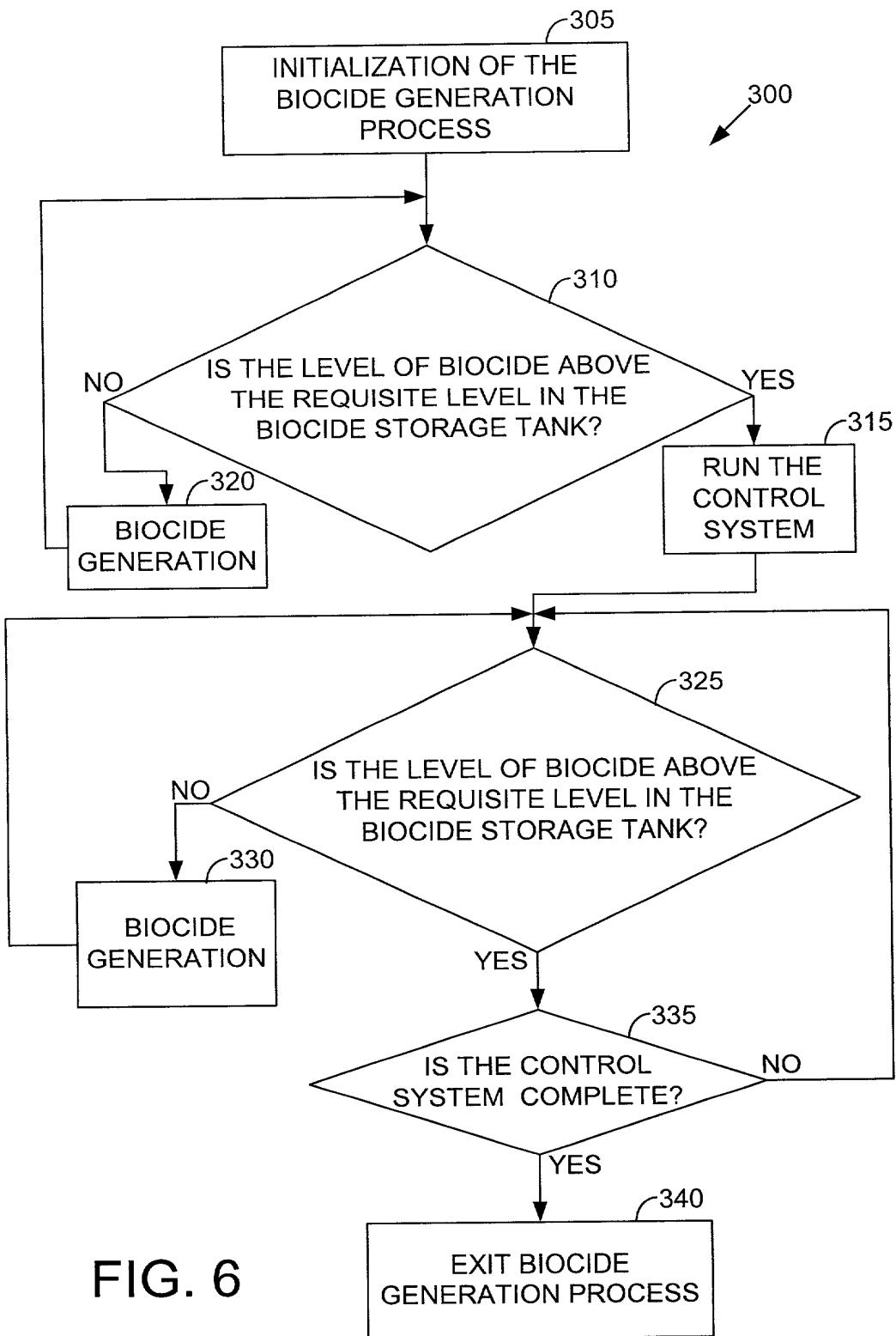


FIG. 5



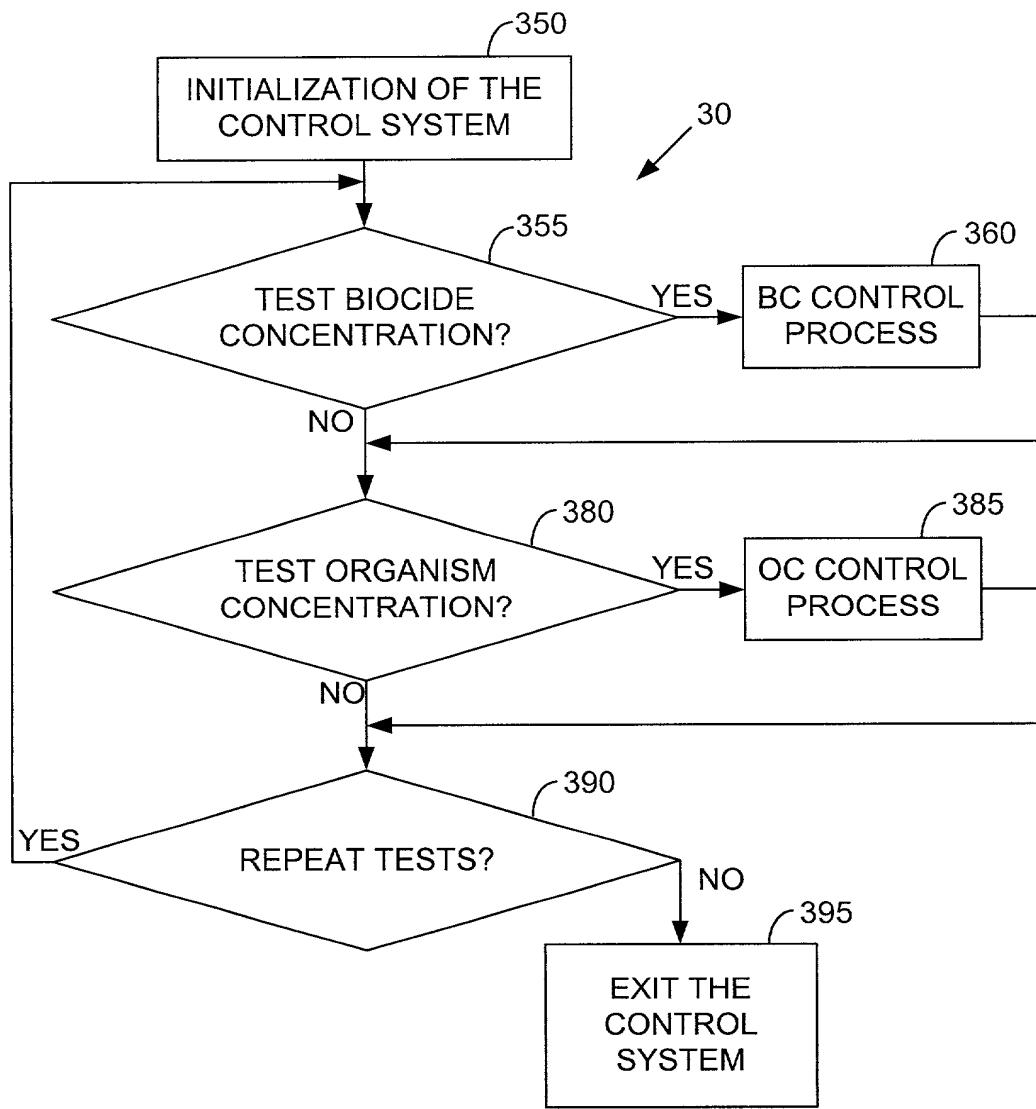


FIG. 7

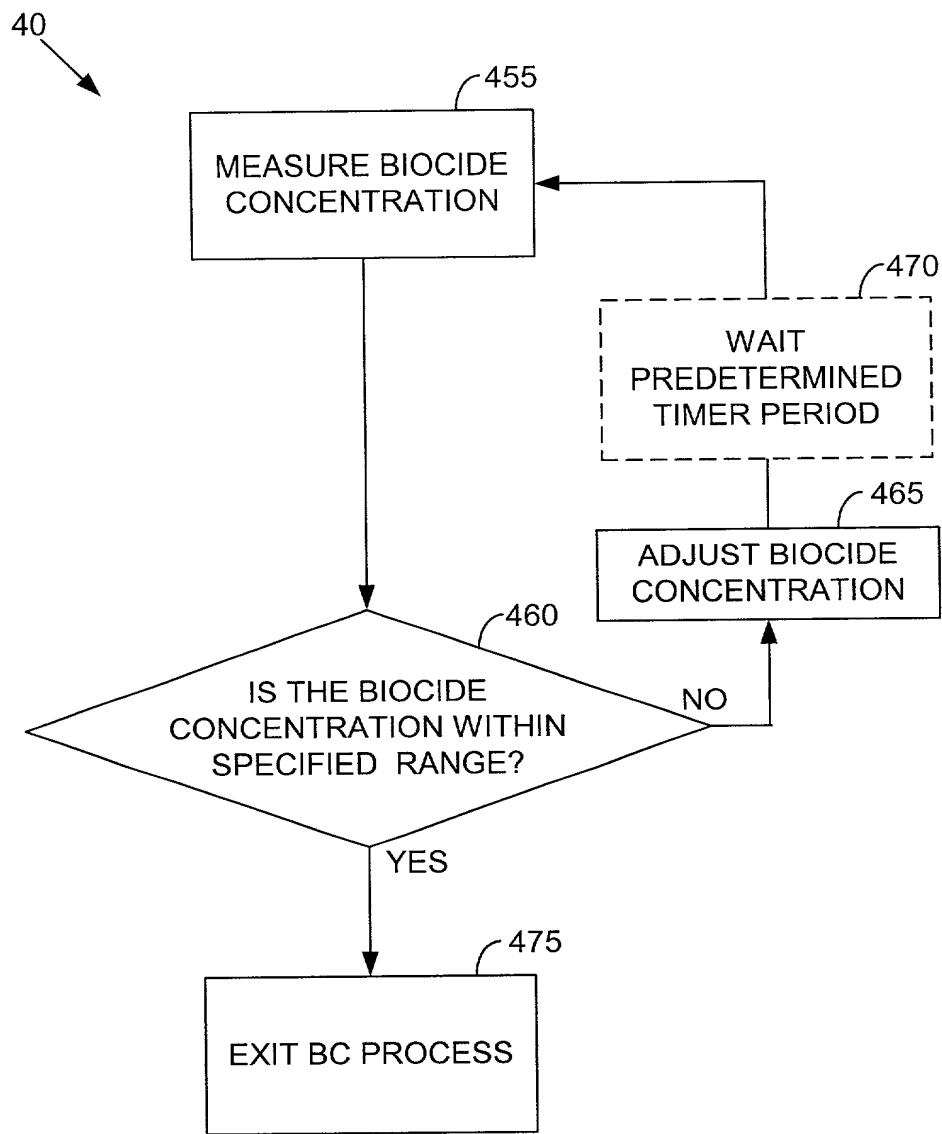


FIG. 8

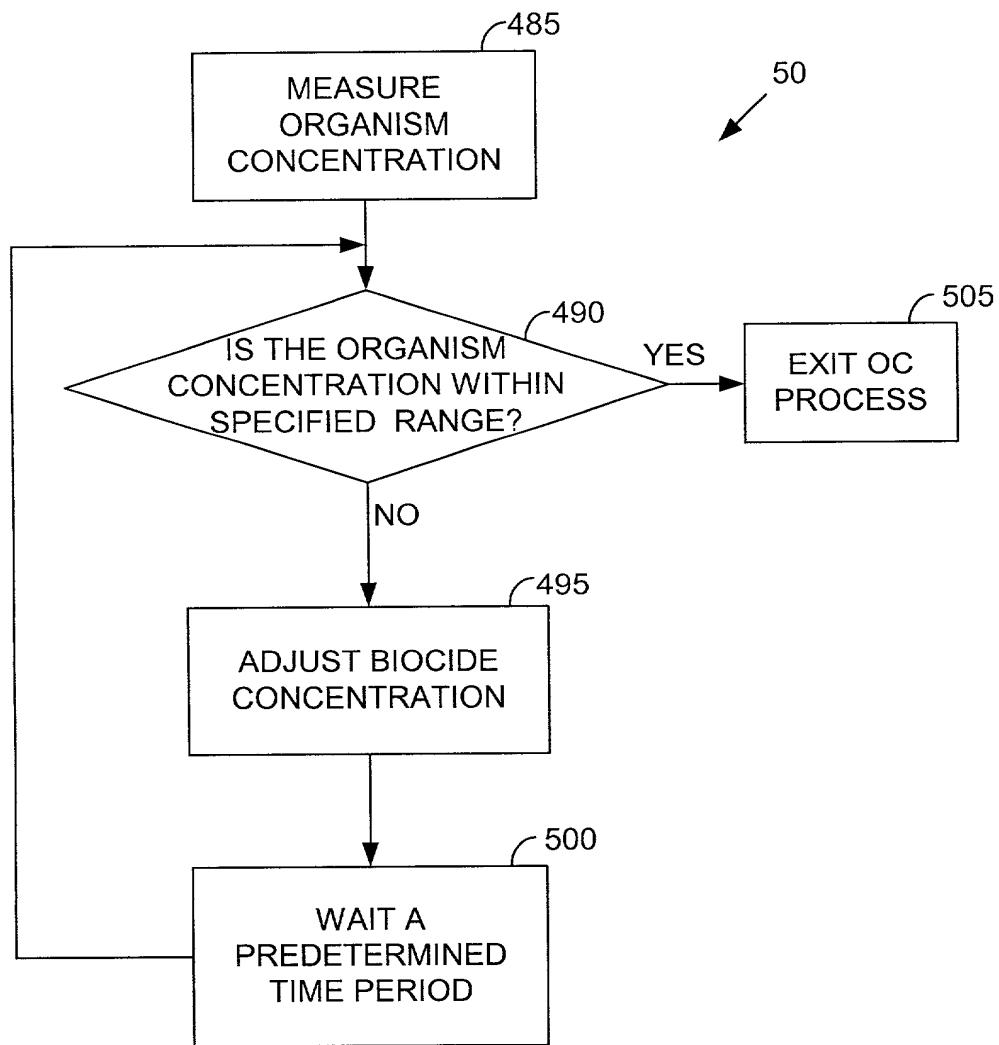


FIG. 9